

REMARKS

Claims 4, 7, 10 and 12 have been canceled. Claims 1-3, 5, 6, 8, 9 and 11 remain active in the case. Claims 1, 2, 6 and 8 stand withdrawn from consideration. Reconsideration is respectfully requested.

Claim Amendment

Claim 3 has been amended by incorporating the limitation of Claim 4 therein, and Claim 4 has been canceled. Further, the nitrogen adsorption range has been amended to recite a minimum value of 24 m²/g. Support for this amendment can be found in Table 2 on page 21 of the text. Entry of the amendment is respectfully requested.

Abstract of the Disclosure

A new abstract is attached to the end of this response. Withdrawal of the objection is respectfully requested.

Claim Rejection, 35 USC 112

The non-reference ground of rejection is believed obviated by the amendments made to Claims 3 and 5. No issue with respect to Claim 11 has been made. Withdrawal of the rejection is respectfully requested.

Invention

The present invention is directed to an aqueous carbon-containing unshaped refractory, comprising 3 to 15 % by weight based on the total weight of the refractory of a carbon black material having a specific surface area according to a nitrogen adsorption method of 24 to 30 m²/g, and further comprising 0.02 to 0.03 % by weight of β -naphthalenesulfonic acid-formaldehyde condensate as the sodium salt per 1 % of the carbon black material. The carbon-containing aqueous unshaped refractory with excellent corrosion resistance.

Prior Art Rejection

Claims 3 and 9 stand rejected based 35 USC 102(e) as anticipated by Li et al, U.S. Patent Publication 2002/0022567. This ground of rejection is respectfully traversed.

The Li et al publication discloses a refractory composition that in addition to a refractory aggregate is said to contain an ultrafine refractory thermal black in an amount of about 2 to 15 % by wt and a dispersant component in an amount of about 0.05 to 2 wt %. The reference on page 5, column 2 discloses several different types of dispersants of which only the dispersant identified as Daxad 11 is a polymerized sodium alkyl naphthalenesulfonate salt. One example of a composition that contains a thermal black and a sodium alkyl naphthalenesulfonate salt dispersant is disclosed in Table 1 and that example is Example 3. Here the composition contains 5.0 % by wt of Thermax Floform N-990 carbon black and 0.2 % by wt of Daxad 11. These amounts correspond to an amount of 0.04 wt % dispersant to 1 % by wt carbon, which relative amounts are not within the limits of the aqueous carbon-containing refractory that is presently claimed.

It also should be observed that the carbon black component of the present composition is distinguished over the specific thermal black (Thermax Floform N-990) of the reference on the basis of specific surface areas. While the data sheet of Thermax Floform N-990 discloses that the thermal black has a specific surface area of 7-12 m²/g, the carbon black as now claimed has a specific surface area of 24 to 40 m²/g. (It is pointed out that basis for the minimum surface area of 24 m²/g in present Claim 3 is found in the description of Carbon Black in Table 2 on page 21 of the present text.) Accordingly, it is clear that the present invention as claimed is distinguished over the Li et al publication.

As to the cited JP '883 document, although the document is entitled a magnesia-carbon castable refractory, the Example of the document does not describe a carbon containing castable material. Accordingly, the reference is silent as to the matter of the amount of dispersant employed relative to the amount of carbon black in a castable composition. The reference therefore does not overcome or improve upon the differences

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between the present invention as claimed and the Li et al publication. Withdrawal of the rejection is respectfully requested.

It is believed that the application is in proper condition for allowance. Early notice to this effect is earnestly solicited.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.
Norman F. Oblon

A handwritten signature in cursive script, appearing to read "F D Vastine".

Frederick D. Vastine, Ph.D.
Registration No.: 27,013

Customer Number
22850

TEL: 703-413-3000
FAX: 703-413-2220